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Photometric Test Report

Relevant Standards
IES LM-79-2008
ANSI C82.77-2002
UL1598-2008

Prepared For
Mercury Lighting

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Fairfield, NJ 07004-3416

Catalog Number
L455-2-2100-30K-HTA20-S30-20-UNI-XXXX

Order Number
10626167
Test Number
856724

Test Date

2015-01-02

Prepared By

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Approved By

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DLC Results Summary

Technical Requirements v2.1

Linear Ambient Luminaires: Direct		
Requirement Category	Requirement	Test Results
Minimum Light Output	≥337.5 Lumens/ft	2156
Minimum Lamp Output	N/A	N/A
Spacing Criteria (0-180°)	N/A	N/A
Spacing Criteria (90-270°)	N/A	N/A
Zonal Lumen Requirement (0-60°)	≥37%	66.3%
Zonal Lumen Requirement 2	N/A	N/A
Minimum Luminaire Efficacy	≥82.45 lm/w	91.7 lm/w
Minimum Lamp Efficacy	N/A	N/A
Allowable CCTs*	≤5000K	3055 K
Minimum CRI	≥78	82.6
L70 Lumen maintenance	50000 Hours	TM-21 must be completed
Minimum Luminaire Warranty	5 Years	N/A
Power Factor 120 / 277	≥0.87	0.930
Total Harmonic Distortion (A-%)	≤25%	5.184%

*Defined by ANSI C78.377-2011†

†ANSI C78.377-2011 also referred to for Duv and (x,y) chromaticity coordinates tolerances for indoor categories

Laboratory results may not be representative of field performance
Ballast factors have not been applied

Testing was performed in a 2-meter integrating sphere using the 4π geometry method.

Absorption correction was employed for Sphere measurement



Luminaire Description: Formed white enamel steel housing, white enamel steel reflector, frosted plastic lens enclosure
Lamp: 60 white LEDs
Mounting: Surface
Ballast/Driver: One Osram Optotronic OT30W/PRG1050C/UNV/DIM/L

Luminaire



Luminaire Characteristics

Luminous Length: 24.00 in.
Luminous Width: 4.750 in.
Luminous Height: 1.75 in.

Summary of Results

Integrating Sphere

Luminous Flux: 2156 Lumens
Efficacy: 87.3 lm/w
CCT: 3055 K
CRI (Ra): 82.6

Distribution

Total Luminaire Output: 2128 Lumens
Luminaire Efficacy: 91.7 lm/w
Maximum Candela: 647.1 Candela

Electrical Data at 277 VAC

Test Temperature: 25.5 °C
Voltage: 277.1 VAC
Current: 0.09588 A
Power: 24.69 W
Power Factor: 0.930
Frequency: 60 Hz
Current THD: 13.1 %

In-Situ

LED Temperature: 62.4 °C
Driver Temperature: 51.0 °C
Maximum LED Current: 0.1119 A

Temperatures are offset to an ambient temperature of 25°C as described in UL1598-2008



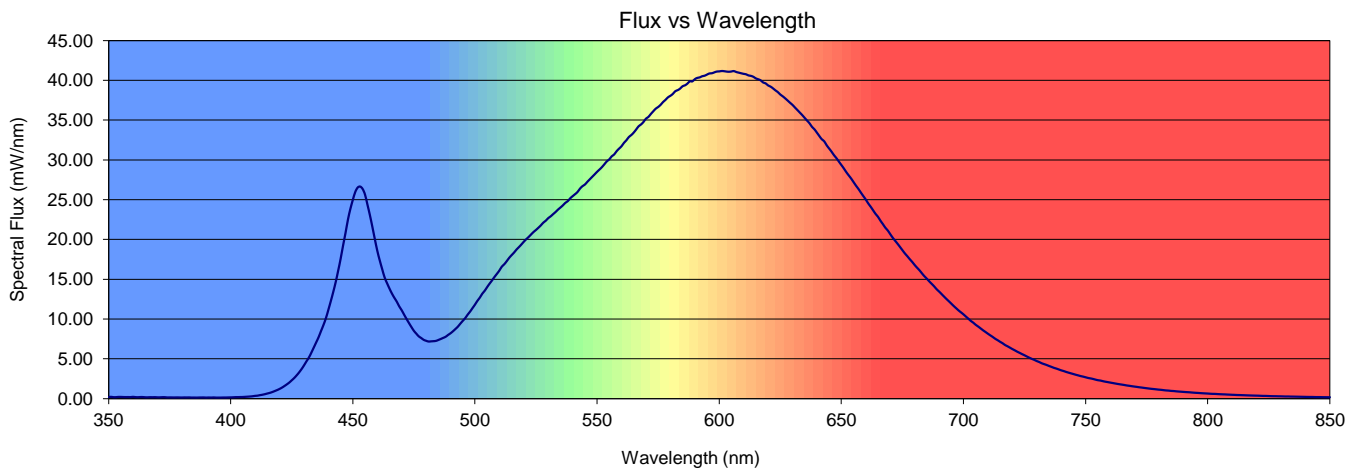
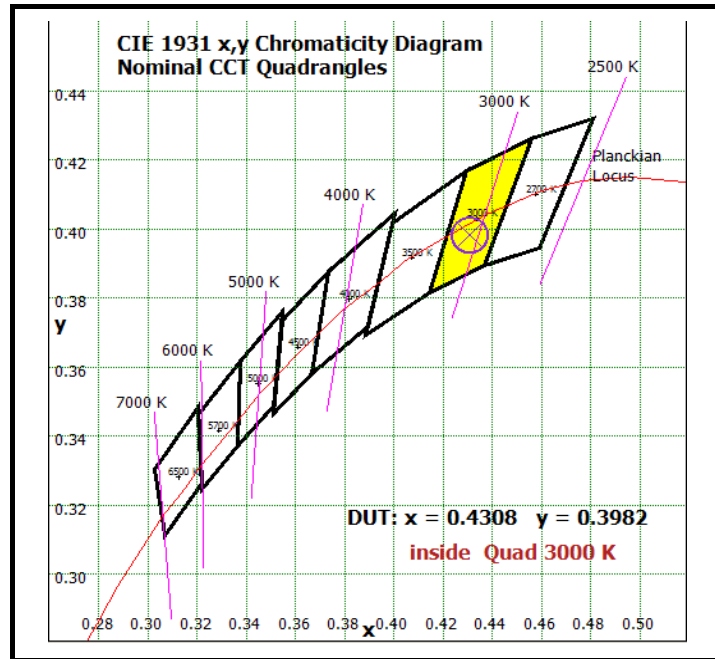
Color Quality - Integrating Sphere

Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.5 °C	277.1 VAC	0.09588 A	24.69 W	0.930	60 Hz	13.1 %

Summary of Results

Luminous Flux	2156 Lumens
Efficacy:	87.3 lm/w
CCT:	3055 K
CRI (Ra):	82.6
CRI (R9):	20.4
Chromaticity (x)	0.4308
Chromaticity (y)	0.3982
Chromaticity (u)	0.2491
Chromaticity (v)	0.3454
Chromaticity (u')	0.2491
Chromaticity (v')	0.5182
Duv:	-0.0015





Distribution - Goniophotometer

Distribution Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.8 °C	120.0 VAC	0.1944 A	23.21 W	0.995	60 Hz	5.18 %

Summary of Results

Spacing Criteria

0-180: 1.19
90-270: 1.30

Total Lumen Output:

2128 Lumens

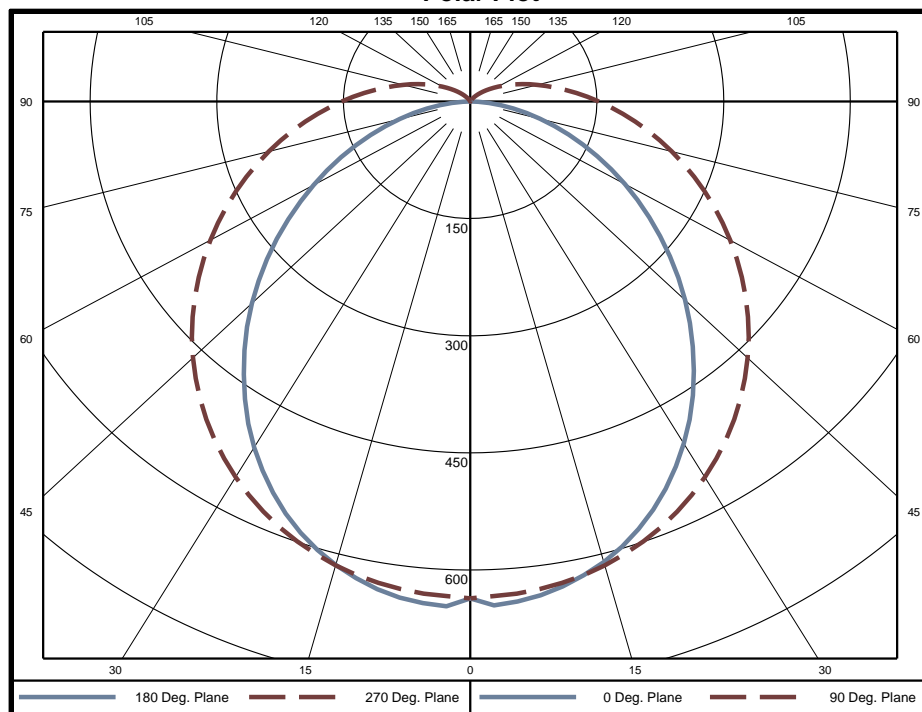
Luminaire Efficacy:

91.7 lm/w

Maximum Candela:

647 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	16.1	0.76%	60-65	129.5	6.08%	120-125	7.1	0.33%
5-10	45.0	2.11%	65-70	115.1	5.41%	125-130	4.6	0.22%
10-15	73.2	3.44%	70-75	99.6	4.68%	130-135	2.9	0.13%
15-20	98.6	4.63%	75-80	83.9	3.94%	135-140	1.7	0.08%
20-25	120.5	5.66%	80-85	68.7	3.23%	140-145	0.9	0.04%
25-30	137.9	6.48%	85-90	54.8	2.57%	145-150	0.3	0.02%
30-35	150.4	7.06%	90-95	43.2	2.03%	150-155	0.1	0.00%
35-40	157.8	7.42%	95-100	33.9	1.59%	155-160	0.0	0.00%
40-45	160.4	7.53%	100-105	26.1	1.23%	160-165	0.0	0.00%
45-50	158.2	7.43%	105-110	19.7	0.93%	165-170	0.0	0.00%
50-55	151.8	7.13%	110-115	14.5	0.68%	170-175	0.0	0.00%
55-60	141.9	6.67%	115-120	10.3	0.48%	175-180	0.0	0.00%



Candela Tabulation
Horizontal Angle (Degrees)

	0	22.5	45	67.5	90	113	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5
0	636	636	636	636	636	636	636	636	636	636	636	636	636	636	636	636
5	643	632	632	633	633	633	632	632	645	632	632	633	633	633	632	632
10	631	621	623	625	626	625	623	621	634	621	623	625	626	625	623	621
15	611	602	609	613	615	613	609	602	615	602	609	613	615	613	609	602
20	583	577	588	596	599	596	588	577	588	577	588	596	599	596	588	577
25	547	544	562	574	579	574	562	544	553	544	562	574	579	574	562	544
30	506	505	531	548	555	548	531	505	512	505	531	548	555	548	531	505
35	460	463	497	518	528	518	497	463	465	463	497	518	528	518	497	463
40	410	417	459	485	497	485	459	417	416	417	459	485	497	485	459	417
45	360	370	419	450	464	450	419	370	366	370	419	450	464	450	419	370
50	309	322	378	412	429	412	378	322	314	322	378	412	429	412	378	322
55	259	275	337	374	392	374	337	275	263	275	337	374	392	374	337	275
60	211	230	297	336	355	336	297	230	214	230	297	336	355	336	297	230
65	166	187	258	299	318	299	258	187	169	187	258	299	318	299	258	187
70	124	148	221	263	282	263	221	148	126	148	221	263	282	263	221	148
75	85	112	186	228	247	228	186	112	86	112	186	228	247	228	186	112
80	52	81	155	195	213	195	155	81	52	81	155	195	213	195	155	81
85	22	57	127	164	181	164	127	57	22	57	127	164	181	164	127	57
90	0	37	102	137	152	137	102	37	0	37	102	137	152	137	102	37
95	0	24	82	112	126	112	82	24	0	24	82	112	126	112	82	24
100	0	15	64	90	102	90	64	15	0	15	64	90	102	90	64	15
105	0	9	49	72	82	72	49	9	0	9	49	72	82	72	49	9
110	0	6	37	56	65	56	37	6	0	6	37	56	65	56	37	6
115	0	3	27	43	51	43	27	3	0	3	27	43	51	43	27	3
120	0	2	19	32	38	32	19	2	0	2	19	32	38	32	19	2
125	0	1	13	23	28	23	13	1	0	1	13	23	28	23	13	1
130	0	0	9	16	20	16	9	0	0	0	9	16	20	16	9	0
135	0	0	5	10	13	10	5	0	0	0	5	10	13	10	5	0
140	0	0	3	6	8	6	3	0	0	0	3	6	8	6	3	0
145	0	0	1	3	5	3	1	0	0	0	1	3	5	3	1	0
150	0	0	0	2	2	2	0	0	0	0	0	2	2	2	0	0
155	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
160	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
165	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
170	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
175	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Average Luminance (cd/m²)
Horizontal Angle (Degrees)

	0	45	90
45	0	0	0
55	0	0	0
65	0	0	0
75	0	0	0
85	0	0	0



Utilization of Lumens - Zonal Cavity Method

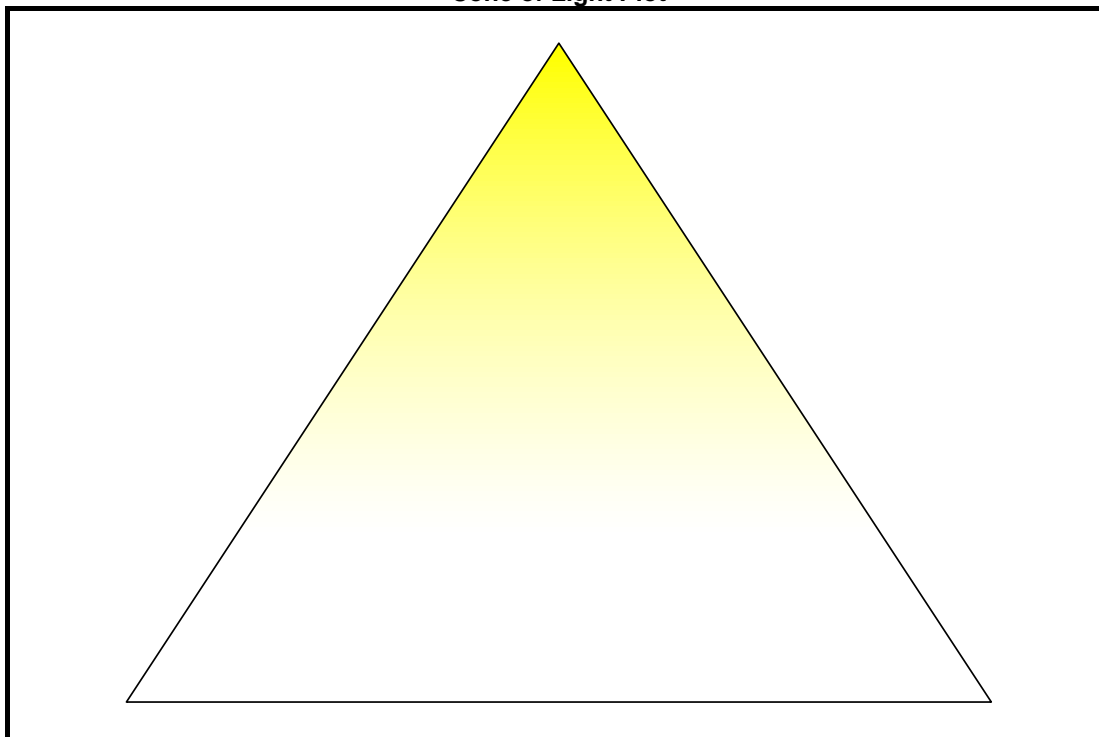
Effective Floor Cavity Reflectance 20%

Ceiling Cavity Reflectance	80				70				50			30			10			0
Wall Reflectance	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio (RCR)	** Values are expressed as Lumens delivered to the task surface **																	
0	2495	2495	2495	2495	2418	2418	2418	2418	2274	2274	2274	2142	2142	2142	2021	2021	2021	1964
1	2237	2118	2012	1916	2160	2053	1956	1869	1931	1852	1780	1818	1754	1695	1715	1664	1616	1558
2	2021	1829	1669	1535	1948	1773	1627	1504	1670	1548	1443	1574	1474	1385	1486	1403	1330	1273
3	1837	1597	1412	1264	1768	1550	1380	1242	1462	1318	1199	1381	1259	1157	1305	1203	1116	1061
4	1678	1411	1215	1065	1615	1371	1189	1048	1296	1139	1016	1226	1092	984	1161	1047	953	900
5	1542	1258	1059	913	1484	1224	1039	900	1159	998	875	1099	960	850	1043	923	826	775
6	1423	1131	935	794	1370	1102	918	784	1046	885	764	994	852	744	946	822	725	676
7	1318	1024	833	700	1271	999	819	691	951	791	675	906	764	659	863	738	643	597
8	1227	934	749	623	1184	912	737	616	870	714	602	830	691	589	793	669	575	532
9	1146	856	679	559	1107	837	669	553	800	648	542	765	629	530	733	610	519	478
10	1074	790	619	506	1038	773	610	501	740	593	491	709	576	481	680	559	472	433

Cone of Light Tabulation

Mounting Height	Footcandles at Nadir	Diameter (Feet)
4.00	39.8	4.95
6.00	17.7	7.42
8.00	9.94	9.89
10.0	6.36	12.4
12.0	4.42	14.8
14.0	3.25	17.3
16.0	2.49	19.8

Cone of Light Plot





In-Situ Test

In-Situ Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
23.3 °C	120.0 VDC	N / A	N / A	60.0	N / A	N / A

Summary of Results

LED Temperature: 62.4 °C
Driver Temperature: 51.0 °C
Maximum LED Current: 0.1119 A

Temperatures are offset to an ambient temperature of 25°C as described in UL1598-2008

LED Temperature Location



Driver Temperature Location

